

## AC11503, AC12503, AC13503, AC14503, AC15503, AC16503

### Ultra Broadband RF Amplifier

This low noise ultra broadband amplifier fits ideally for LNA applications in the areas of communications or signal analysis. With Low VSWR at both ports the device can be inserted in standard 50  $\Omega$  systems without additional attenuators and is fully cascable. The internal bias control provides constant operation conditions over a wide temperature range and allows for supply voltages that slightly differ from the specified values.

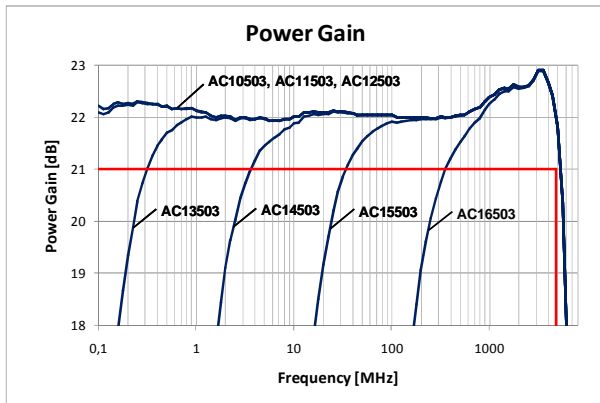
The ACxx503 amplifier can be ordered with different start frequencies from 10 kHz to 1.000 MHz. Other than the standard values listed in this data sheet are available on request.

Connectors other than SMA female are available on request.

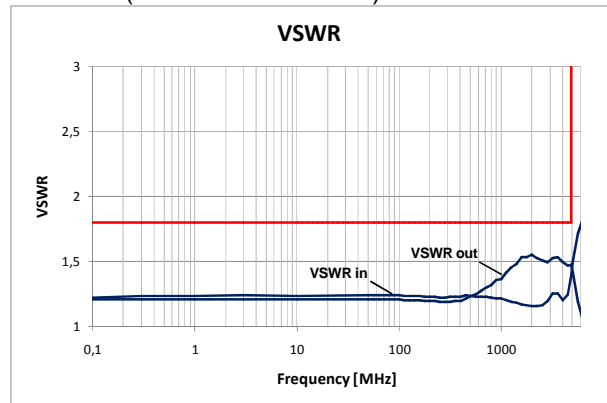
| Technical Data                               |            | Unit   | min       | typ        | max        |
|--|------------|--------|-----------|------------|------------|
| Start Frequency (pass band)                  | AC11503    | kHz    |           | 10         |            |
|  | AC12503    |        | 100       |            |            |
|  | AC13503    | MHZ    |           | 1          |            |
|  | AC14503    |        | 10        |            |            |
|  | AC15503    |        | 100       |            |            |
|  | AC16503    |        | 1000      |            |            |
| Stop Frequency (pass band)                   | all models | GHz    | 4.8       | 5.0        |            |
| Average Gain (pass band)                     | all models | dB     | 21        | 22         |            |
| Gain Variation (pass band)                   | all models | dB     |           | $\pm 1.0$  | $\pm 1.5$  |
| Output Power (P -1dB)                        | all models | dBm    | 13.5      | 14.5       |            |
| Noise Figure (pass band > 200 MHz)           | all models | dB     |           | 2.7        | 2.9        |
| VSWR in (pass band)                          | all models |        |           | 1.3        | 1.8        |
| VSWR out (pass band)                         | all models |        |           | 1.5        | 1.8        |
| Positive Power Supply (current in operation) | all models | V (mA) | 14.8 (95) | 15 (100)   | 15.5 (105) |
| Case Type                                    | all models |        |           | pa-A       |            |
| Connectors                                   | all models |        |           | SMA female |            |

## Typical Device Data

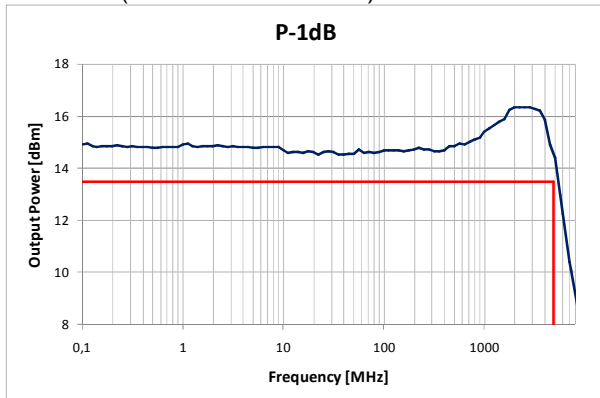
All models



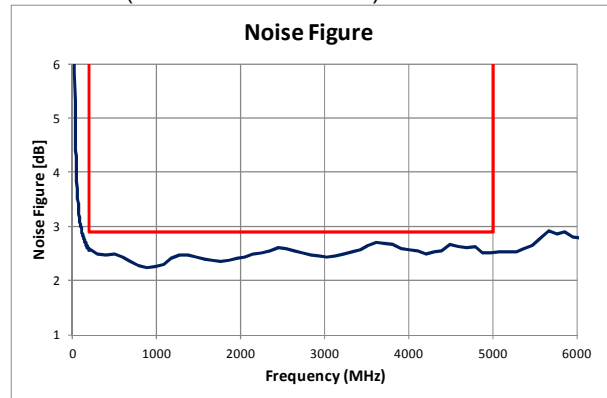
AC11503 (other models similar)



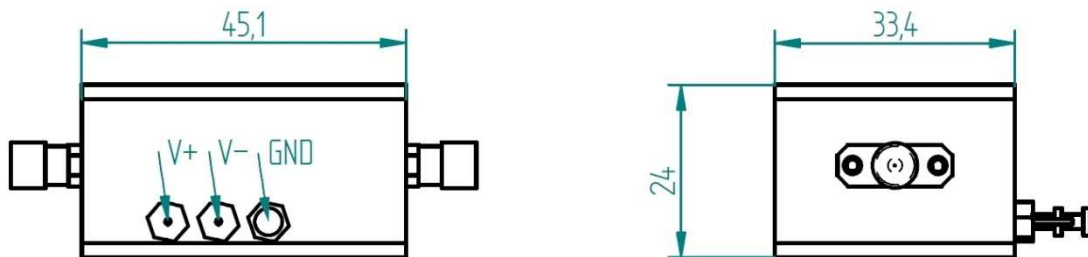
AC11503 (other models similar)



AC11503 (other models similar)



## Case Dimensions (case type pa-A)



## Application Notes

Each ultra-broad-band amplifier from picoamps is completely tested before shipment in order to verify the specifications given in the data sheet.

To ensure a long and reliable operation of the device please take care of the following precautions:

- To secure the input stage of the amplifier, the input cable **MUST BE UNLOADED** before connecting it to the device. Connecting a cable with a static input voltage exceeding  $\pm 2V$  may severely damage the amplifier, even if the power is switched off.
- Connect input and output cables and all power cables before powering up the amplifier
- Power up the amplifier by switching on the specified voltages simultaneously within a range of  $+0.5/-0.2 V$ . Please note that the initial current during the power up phase of the amplifier may be substantially higher than the specified value.
- The maximum rated input power of the amplifier is 0 dBm. Signals with higher power level may severely damage the device.

To achieve long lifetime of the amplifier it is strongly recommended to apply an external heat sink, which can easily be mounted to the bottom of the amplifier case.

This data sheet is valid from January 2012. The technical data may be subject to changes without prior notice.